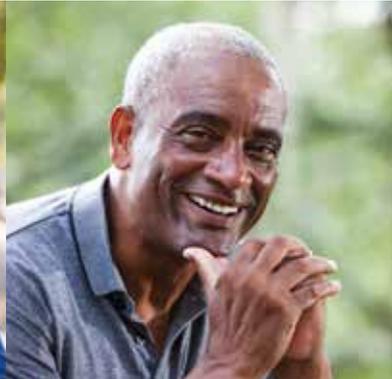




Taking Charge of Your Diabetes



Memorial
HEALTH SYSTEM 



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TWO TYPES OF PROBLEMS IN DIABETES

1 Insulin insufficiency



Glucose + Not enough insulin

Remaining blood sugar is not converted into usable energy.

2 Insulin resistance



Insulin + Glucose → Resistant cells

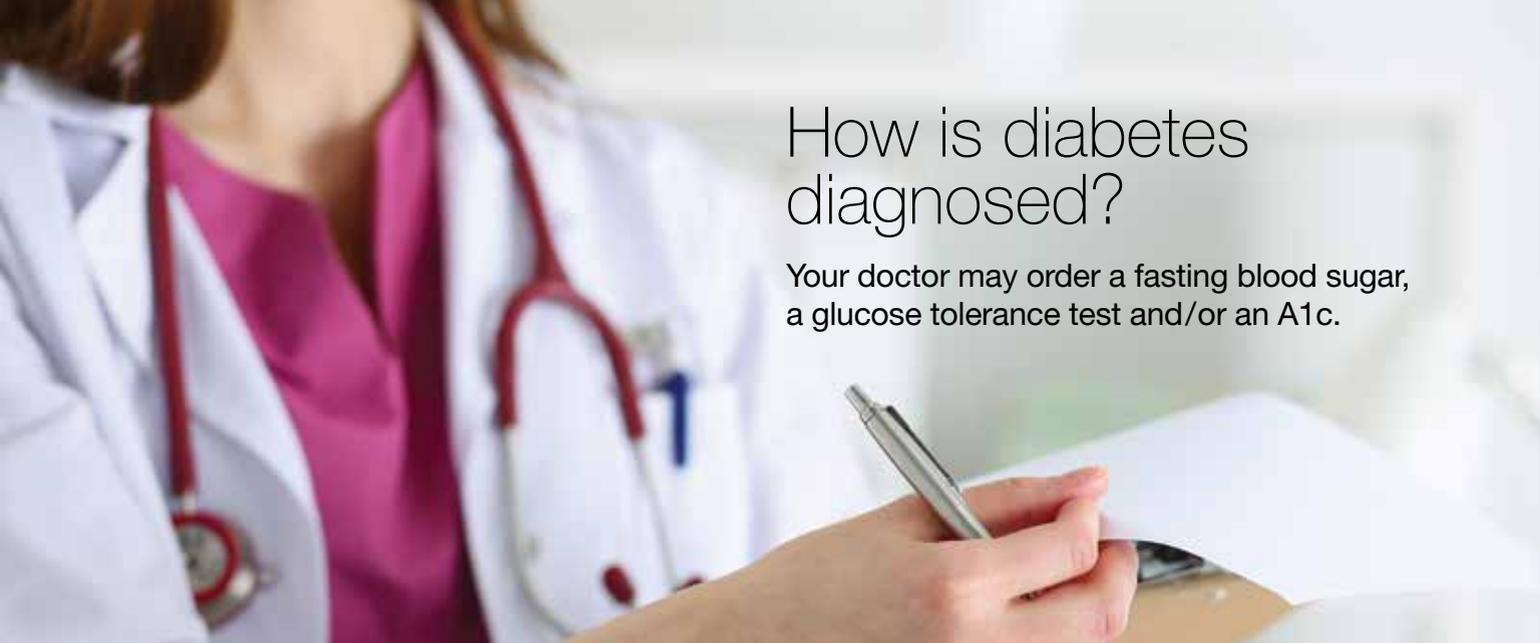
Cells become resistant to insulin and do not get replenished with energy.

When you are diagnosed with diabetes, there are basic things you need to learn. This booklet provides you with general information to help you understand and better manage your diabetes. The more you learn about diabetes, the more you can be prepared to help yourself if problems arise. If you have questions about your diabetes management, always contact your healthcare team: doctor, nurse, dietitian, pharmacist or diabetes educator.

What Is Diabetes?

Diabetes affects the way the body uses food and causes sugar (glucose) levels in the blood to be too high. Normally, insulin helps sugar leave the blood and enter our bodies cells to be used for energy. In type 1 diabetes, the body makes little or no insulin. In type 2 diabetes, the body may continue to make insulin, but it can't use its own insulin as well as it should. No matter which type of diabetes you have, the key to better health is to manage your blood sugar.

Diabetes is a life-long disease that may lead to other health problems. High blood sugar levels can cause damage to the heart, blood vessels, eyes, kidneys, nerves, feet and other issues. Medical research has shown that keeping blood sugar levels near normal helps lower the risk of these complications.



How is diabetes diagnosed?

Your doctor may order a fasting blood sugar, a glucose tolerance test and/or an A1c.

Fasting Plasma Glucose (FPG)

A preferred method

- ▶ You need to fast overnight.
- ▶ This test measures the blood glucose level at the time the blood is drawn.
 - ▶ Blood is drawn from the vein.
 - ▶ Diagnostic tests need to be done **in a lab**, not on a meter.
 - ▶ **Normal:** < 100 mg/dL
 - ▶ **Pre-Diabetes:** 100–125 mg/dL
 - ▶ **Diabetes:** > 126 mg/dL

A1c

A preferred method

- ▶ This test measures average glucose level over 2–3 months.
- ▶ Can be done at any time of day; you do not need to fast.

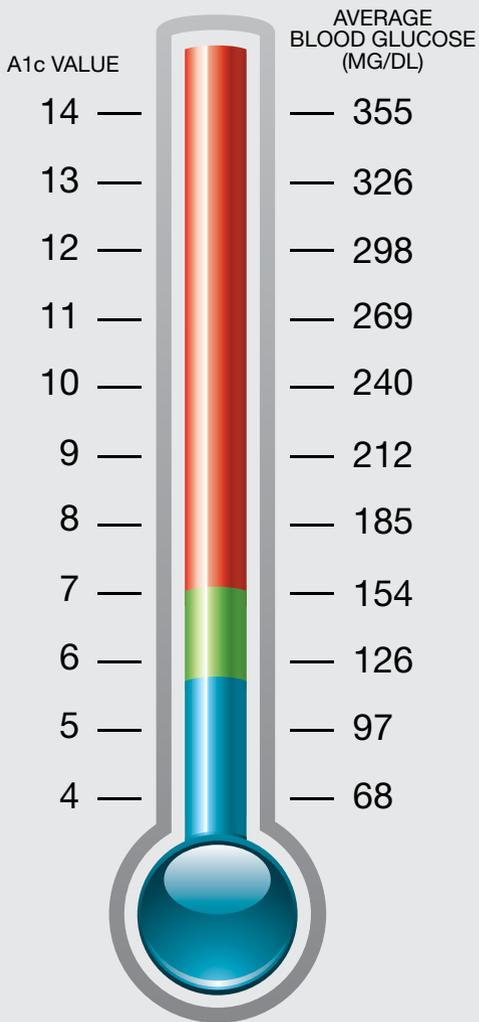
Oral Glucose Tolerance Test (OGTT)

- ▶ You need to fast overnight.
- ▶ At the lab you will drink a solution of 75 grams of glucose dissolved in water.
- ▶ Blood is drawn two hours after the glucose solution has been consumed.

Symptoms of High Blood Sugar and an Elevated Casual Plasma Glucose

(> 200mg/dL)

May follow up with an FPG or A1c



Diagnosis Levels:

Normal Glucose = less than 5.7

Pre-Diabetes = 5.7–6.4

Diabetes = 6.5 or greater

Goal for most people with diabetes:

7.0 or lower

What's my A1c?

Your A1c is your average blood glucose level for the last three months.

Why do I need it?

This number helps you know how well your glucose is controlled over time.

How often should it be checked?

Your A1c should be checked every three to six months.

A1C Checkpoint:

- May need adjustment to diabetes treatment plan. Discuss with your physician.
- Diabetes target range
- Non-diabetic range

My Goals

My hemoglobin A1c currently is _____.

My A1c goal is _____.



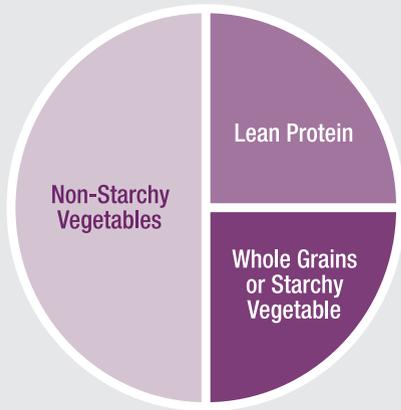
Tools to Control Blood Sugar

The choices you make every day affect your blood sugar.

- ▶ Make healthy food choices.
- ▶ Enjoy regular physical activity.
- ▶ Monitor blood sugar levels.
- ▶ Know the symptoms of high and low blood sugar and what to do.
- ▶ Take medications as directed.
- ▶ Manage stress.
- ▶ Work closely with your healthcare team (doctor, dietitian, nurse, diabetes educator).

Using the Plate Method for Meal Planning

One of the best ways to manage diabetes is to develop a plan for healthier eating and, if necessary, weight loss. Here are some tips to consider as you re-examine your food choices.



Try to keep your meals at least four hours apart. Make sure to include snacks in-between if you need to.



Non-Starchy Vegetables

- ▶ Choose fresh or frozen vegetables that have no added sauce, fat or salt whenever possible.
- ▶ Aim for a variety of colors and types of vegetables.
- ▶ You should be able to fit 1–2 cups of vegetables into lunch and dinner.

Grains, Beans & Starchy Vegetables

- ▶ Aim to choose more whole-grain foods.
- ▶ Add less fat when cooking and to prepared grains, beans and starchy vegetables.
- ▶ Choose higher fiber starchy foods whenever possible.
- ▶ ½–1 cup per meal, or 1–2 slices of bread
- ▶ These foods should take up no more than ¼ of the space on your plate at a meal.



Meat & Meat Substitutes

- ▶ Choose skinless fish and poultry more often.
- ▶ Select lean cuts of meat and trim off all visible fat.
- ▶ Try to bake, broil, grill or boil meats and meat substitutes instead of frying.
- ▶ Read food labels and choose meats and cheeses with less than 5 grams of fat per serving.
- ▶ Typical serving size of protein at meals: 3–4 oz (deck of cards, palm of hand).
- ▶ These foods should take up no more than ¼ of the space on your plate at a meal.

Fruit

- ▶ Try to choose more fresh or frozen fruits than juices because the whole fruits have more fiber.
- ▶ When choosing canned or juice options, look for unsweetened varieties or 100% juice products.
- ▶ Aim to include more citrus fruits such as oranges and grapefruit.
- ▶ Possible serving size suggestions:
 - ▶ Small piece of fresh fruit
 - ▶ ½ cup of frozen or canned fruit
- ▶ Fruit is an optional item to have with your meal or can be used as a healthy snack between meals.

Dairy

- ▶ Choose fat-free or low-fat milk and yogurt.
- ▶ Choose unsweetened products or products with artificial sweeteners.
- ▶ Possible serving size suggestions:
 - ▶ 6 oz light yogurt
 - ▶ 8 oz low-fat milk
- ▶ Dairy foods are an optional item to have with your meal or can be used as a healthy snack between meals.

Exercise and Diabetes

Exercise is very helpful for people with diabetes. Exercise and physical activity lowers blood sugar. If you exercise on a regular basis, your cells become more sensitive to insulin so it can work more efficiently and remove glucose from the blood. Exercise can also improve your A1c, cholesterol and blood pressure. Exercise also strengthens your heart and helps reduce stress which can improve your overall condition.

Talk with your doctor and healthcare team about the best kind of exercise for you.

Here are some easy ways to be active every day:

- ▶ Take the stairs
- ▶ Park farther away
- ▶ Walk the mall
- ▶ Go to the gym
- ▶ Use weights
- ▶ Use resistance bands
- ▶ Dance
- ▶ Yoga
- ▶ Garden
- ▶ Mow the lawn
- ▶ Walk a dog
- ▶ Vacuum

Overall Exercise Goal

- ▶ Most days (**5–7** days per week)
- ▶ Goal **30** minutes per day
- ▶ Start small. If you need to you can start out with **5–10** minutes per day and gradually work toward **30** minutes.

What is your exercise goal?



Testing Your Blood Sugar at Home

How often you test your blood sugar will depend on your diabetes control and when you take your medicine. Check with your doctor about when to test your blood sugar at home. Blood sugar testing is usually done just prior to eating and 1–2 hours after starting a meal.

There are many different blood glucose machines available. An instruction booklet with an (800) telephone number for questions will come with your machine. Ask your healthcare provider for help if you have any questions about testing.

A drop of blood from your finger can be used to test your blood sugar level. To do this:

1. Wash your hands with soap and warm water.
2. Follow the directions on your lancet device and make a puncture on the side of your finger. Choose a different finger every time you check.
3. Gently squeeze the finger to get a drop of blood.
4. Apply the drop of blood following the instructions that came with your blood glucose machine.

Keep a record of your test results so you and your doctor can better discuss the treatment and control of your diabetes. Use a diary or any small notebook to record your blood sugar results. Be sure to take these records with you when you see your doctor and diabetes educator. There is a sample diary in the back of this booklet.

My blood sugar goal is _____ mg/dL.

Call your doctor if blood sugar results **are less than 70mg/dL** or **greater than 250mg/dL** (or the numbers set by your doctor) on two occasions.



According to the American Diabetes Association, the goal is to keep blood sugar levels between 70–130 mg/dL before meals and less than 180 mg/dL two hours after meals.

These guidelines apply to most people with diabetes but not everyone. Ask your doctor what range is best for you.

Once you set a goal with your doctor, remember that all your blood sugar readings may not be in this range. The goal is to keep your levels in range most of the time.

High Blood Sugar (Hyperglycemia)

What Causes High Blood Sugar

- ▶ Too much food
- ▶ Too little insulin or diabetes medication
- ▶ Illness and stress
- ▶ Not enough exercise

What You Can Do

1. Test your blood sugar.
2. Call your doctor if your blood sugar stays above 250 mg/dL (or the number set by your doctor) for several tests.
3. Stay hydrated. Drinking water can help your body flush out high blood sugar.

How To Prevent High Blood Sugar

- ▶ Check your blood sugar regularly and keep records.
- ▶ Follow your meal plan and do not overeat.
- ▶ Take your medication at the correct time.
- ▶ Exercise regularly.
- ▶ Take steps to deal with any personal, family or business problems that have you upset or worried.
- ▶ See your doctor if you are ill or have an infection.



Extreme
Thirst



Frequent
Urination



Dry Skin



Hunger



Blurred vision



Drowsiness



Nausea

Symptoms of High Blood Sugar

What Causes Low Blood Sugar

- ▶ Too little food
- ▶ Too much insulin or diabetes medication
- ▶ Extra exercise

How to Prevent Low Blood Sugar

- ▶ Follow your meal plan and do not skip meals.
- ▶ Take your medication at the correct time.
- ▶ Check your blood sugar regularly and keep records.

Other Cautions

- ▶ Always carry some form of fast-acting sugar with you such as hard candy or glucose tablets.
- ▶ Contact your doctor if you are having frequent low blood sugar.
- ▶ Do not drive or operate heavy machinery with a low blood sugar.

Low Blood Sugar (Hypoglycemia)

Blood sugar levels below 70 mg/dL (or the level set by your doctor) may cause the symptoms listed below.

Low blood sugar can occur quickly. Someone else may need to help you treat it if you are unable to treat yourself. Be sure those close to you (family, friends and co-workers) know the symptoms and how to treat you. Some people taking medications called beta blockers may not have these symptoms when their blood sugar drops. You should always wear a form of identification (medical alert bracelet or necklace) or carry a diabetes wallet card.

What You Can Do

1. If you can, test your blood sugar to see if it is low.
2. Eat or drink some form of fast-acting sugar right away, such as: ½ cup regular soda (not sugar-free); ½ cup juice; 6–7 hard candies; 3–4 glucose tablets; or 1 packet of glucose gel.
3. Retest your blood sugar after 15 minutes. If it is still less than 70 mg/dL, repeat Step 2, and call your doctor.
4. If it is within an hour of mealtime, go ahead and eat your meal. If it is more than an hour before mealtime, eat a light snack (half a peanut butter or meat sandwich, or cheese and crackers and a half cup of low-fat milk).



Shaking



Anxiety



Dizziness



Sweating



Headache



Irritability



Hunger



Impaired Vision



Weakness/
Fatigue



Fast
Heartbeat

Symptoms of Low Blood Sugar

Medications

Medications may be a necessary tool to help control your diabetes along with healthy eating and exercise. Some people can take medications by mouth while others will require injections.

Pills

Medications lower blood sugar by one of the following means:

- ▶ Helping the body make more insulin
- ▶ Reducing the amount of sugar the body makes
- ▶ Helping the body's cells use insulin more effectively
- ▶ Slowing the digestion of sugars
- ▶ Increasing glucose output in urine

Pills do not work for everyone. Appropriate timing of your pills is very important. Discuss with your healthcare team when to take your medicine. Alcohol and other medications (even over-the-counter medications) can affect the way diabetes pills work. If you are taking diabetes pills, be sure to check with your doctor before you take any other medications.

Insulin

Insulin lowers blood sugar by helping move it from the blood into the cells. It can't be taken in a pill form because stomach fluids destroy it before it can be used. Most insulin must be injected under the skin with a syringe. There are several different types of insulin. Some work quickly and others work over a long period of time.

Every person is different, so the type and amount of insulin you need varies from others. Your doctor will tell you what type of insulin you need, how much to use and how often to take it.

My Diabetes Medications:

Medication Name <i>(use both generic and brand names)</i>	How much or strength?	How to take?	How often?	What is it for?

Storing Insulin

If insulin is not stored correctly, it may not work right.

- ▶ Always keep an extra supply of insulin in the refrigerator.
- ▶ Never freeze your insulin or leave in a location where it may reach temperatures greater than 86° or lower than 36° Fahrenheit.
- ▶ Keep it out of direct sunlight and away from heat.
- ▶ Once opened, insulin can be stored at room temperature.
- ▶ Read the packaging to find out how long your insulin is good after opening. Do not use after the expiration date on the bottle.
- ▶ Do not shake your insulin hard or let it get tossed around.



Disposal Tips for Lancets, Pen Needles and Syringes

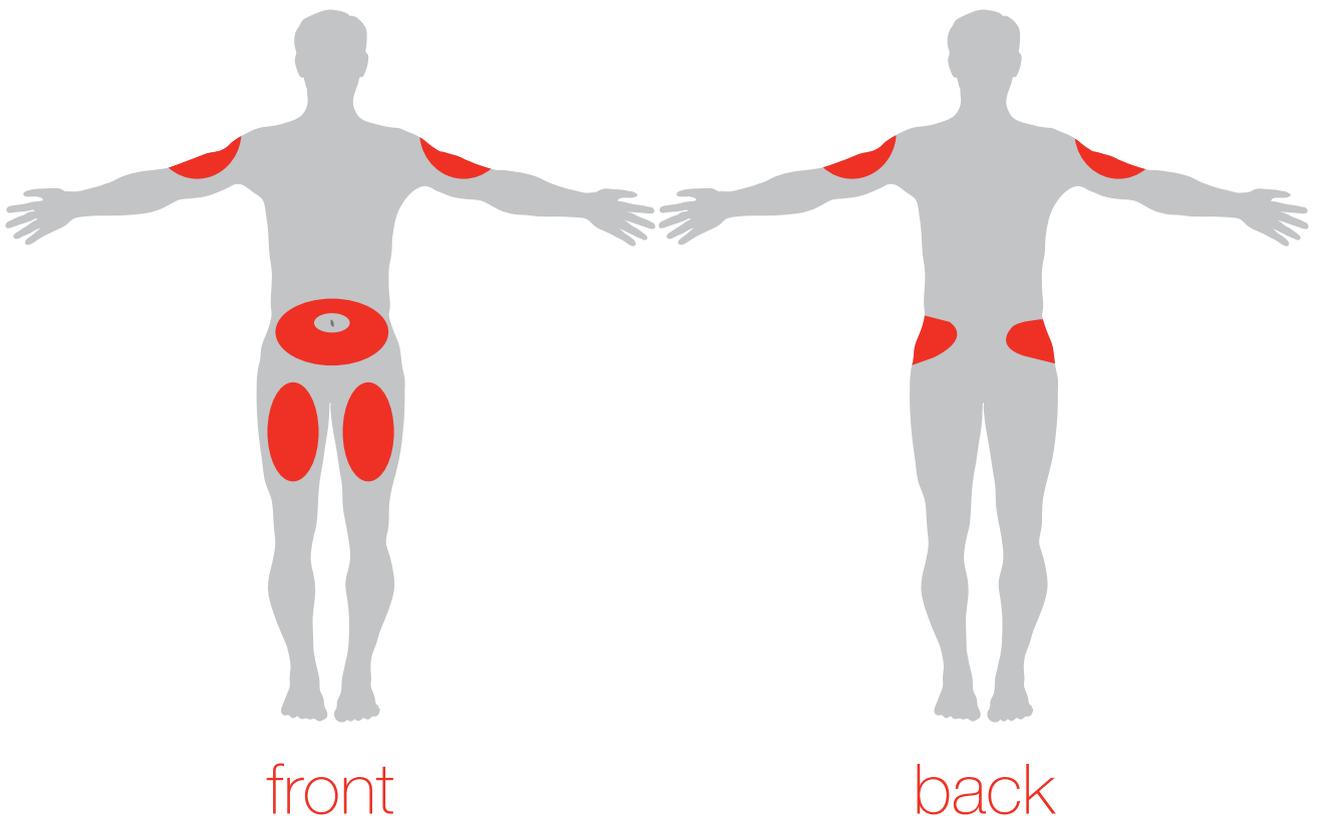
Used sharp lancets, test strips and syringes with needles should be disposed of properly.

Place the sharps in a hard plastic or metal container with a secure lid (for example, a laundry detergent bottle). Do not use glass or clear plastic containers. Mark the container “Do not recycle.” When disposing of these containers, make sure the lid is taped securely. Your doctor’s office or home health nurse can assist with sharps disposal questions if needed. Dispose with your other trash.

Choosing a Site for Insulin Injection

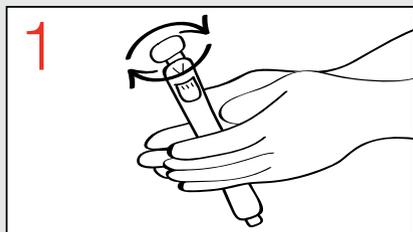
There are many different areas on the body where you can inject insulin. These areas have enough fatty tissue to absorb the insulin. Where you inject your insulin affects how fast it is absorbed. The abdomen absorbs insulin more quickly than the arms or legs. Here are helpful tips to remember:

- ▶ Keep supplies (syringes, cotton, alcohol, insulin) in a clean, handy place.
- ▶ Each time you inject in that area, put the needle into a different spot at least one inch away from your previous shot. Avoid injecting into moles or scars.
- ▶ Changing the site of your shot helps your skin, fat and muscle to stay healthy and prevent hard areas from forming under your skin.
- ▶ Your nurse or diabetes educator can help you practice until you are comfortable with this new skill.

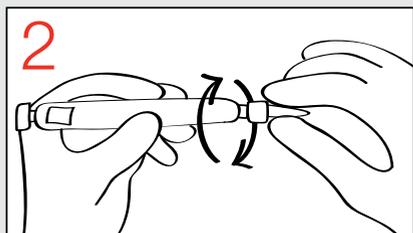


Injecting with an insulin pen

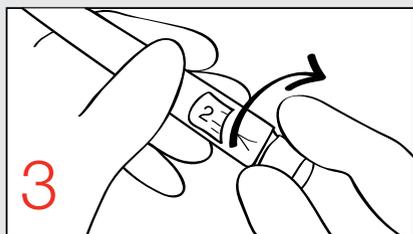
Storage: Store unopened pens in the refrigerator. Opened pens in use can be stored at room temperature per package insert. Do not refrigerate the pen after opening it. If insulin is cold, it may feel more comfortable to roll the pen in your hands a few minutes to warm it up.



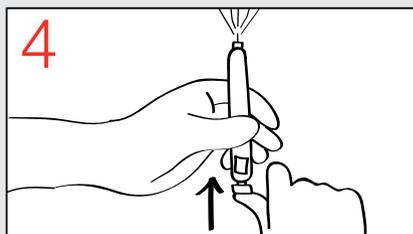
1. Getting ready: Wash your hands. Check to make sure you have the right type of insulin. Check the expiration date on the pen. Some insulins are supposed to be cloudy; these need to be rolled gently to mix properly before injection.



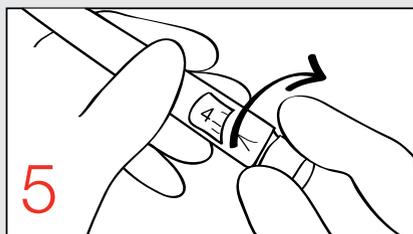
2. Attach the needle: Remove the pen cap and attach a new needle. Always use a new needle for each injection.



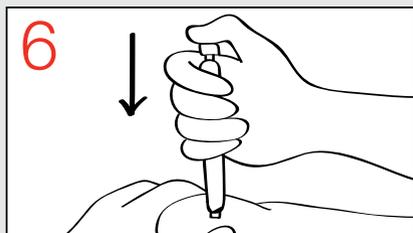
3. Prime the Pen: Prime the pen by dialing 2 units. If you do not prime before each injection, you may get too much or too little insulin.



4. Remove needle cover: Hold pen upright and press the button to shoot 2 units into the air. This ensures that any air bubbles are removed and that the pen is working.

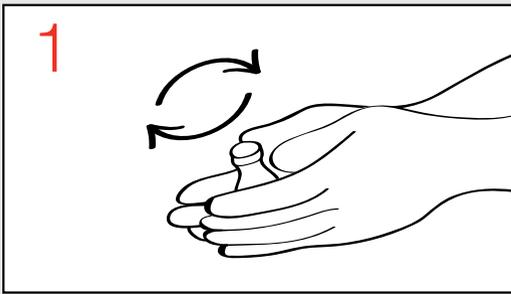


5. Select the dose: Make sure the window shows “0” and then select the dose. Dial the dose of insulin needed. Dial back up or down if you dialed the wrong amount.

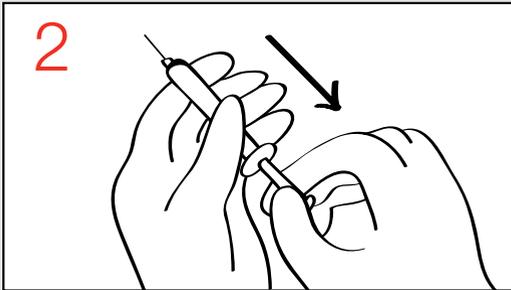


6. Inject the insulin: Before injecting, wipe the injection site with an alcohol swab and let dry. Pinch up the skin using the thumb and forefinger. Insert the needle straight into the skin. Press the button to inject the dose and count to 10 slowly before removing the needle. Safely dispose of the used needle by putting the outer needle cap back on the needle and unscrew (or pull) the needle from the pen. Replace pen cap.

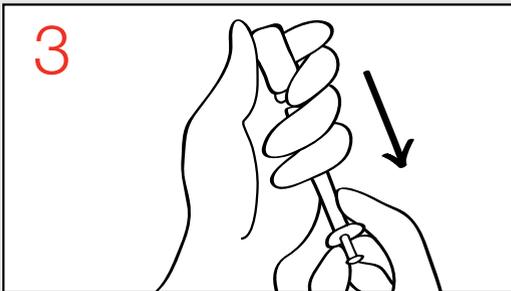
Injections with a vial and syringe



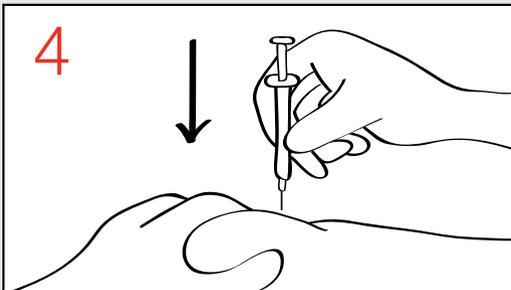
- 1.** Wash your hands. Check insulin label to make sure it is the right insulin. Check expiration date and appearance. For cloudy insulin only, mix the insulin by gently rolling the bottle between your hands. Never shake a bottle of insulin. Wipe the top of the insulin bottle with an alcohol swab.



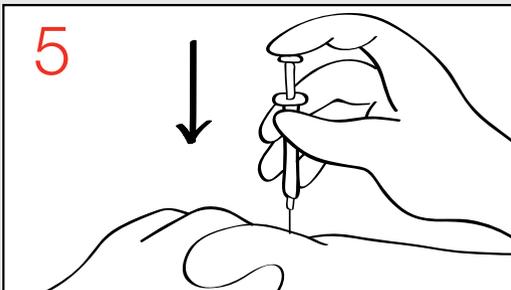
- 2.** Pull the plunger down (filling the syringe with air) to the amount of units needed.



- 3.** Place the insulin bottle on a flat surface. Push the needle into the bottle. Push the plunger in to inject the air into the bottle. Turn the bottle and syringe upside down. Fill syringe by pulling the plunger back to the correct dose of insulin. Remove needle from bottle. If there are air bubbles, push the insulin back into the bottle and pull plunger back to correct dose.



- 4.** Before injecting, wipe the injection site with an alcohol swab and let dry. Pinch up the skin using the thumb and forefinger. Insert the needle straight into your skin.



- 5.** While continuing to hold your skin, slowly depress the plunger, then release the skin and remove the needle. Dispose the needle in an appropriate sharps container.



Emotional Stress, Depression and Diabetes

Stress is a part of everyone's life at some time. With diabetes, blood sugar can become elevated if stress is not managed well. Learning to cope with life's problems is important. Talk with your doctor and healthcare team about different ways to deal with stress and depression.

Sick Day Management

Illness or infections can cause your blood sugar to increase to dangerous levels. Here are ways to help control blood sugars during sick days. Discuss your specific plan with your healthcare team.

- ▶ Test your blood sugar more frequently and call your doctor if your blood sugar is greater than 250 mg/dL (or the number set by your doctor) on more than two occasions.
- ▶ Rest as much as you can.
- ▶ Try to follow your normal meal plan. If you can't keep food down, drink liquids like fruit juice, soda (not sugar-free), gelatin (not sugar-free) or broth-based soups like chicken noodle. Your body needs carbohydrates to function.
- ▶ Drink plenty of fluids (water or other calorie-free liquids). If you feel sick to your stomach, suck on ice chips.
- ▶ Talk to your doctor about pneumonia, flu or other vaccines that are appropriate for you.

Call your doctor if:

- ▶ You can't stay awake or think clearly.
- ▶ You have difficulty breathing.
- ▶ You have vomiting or diarrhea for more than six hours.
- ▶ You cannot keep food or fluids down.
- ▶ You have a fever.
- ▶ Your illness lasts more than 24 hours.
- ▶ Blood sugars stay elevated after several glucose checks.
- ▶ You have questions about taking your medications.
- ▶ If your doctor is not available, go to the emergency department or urgent care facility.



Preventing Long-Term Complications

Having diabetes can increase your risk for developing heart disease, stroke, problems with your vision, kidney disease, poor circulation, nerve damage and sexual problems. Here are some ways to prevent or reduce the risk of these problems.

- ▶ Enroll in an outpatient DSME program to continue learning about diabetes. **(See front cover.)**
- ▶ Talk with a registered dietitian about meal planning.
- ▶ Follow your plan for meals, exercise and medications to improve diabetes control.
- ▶ Test and record your blood sugar level.
- ▶ Try to keep your blood sugar close to normal.
- ▶ Have your blood pressure checked often. If it is high, find out what you can do to lower it and stick with the treatment.
- ▶ Have your A1c (glycosylated hemoglobin) measured at least 2–4 times/year. If not at A1c target, have it re-checked every three months. This blood test shows how well your diabetes has been controlled over the last 2–3 months.
- ▶ Have your blood and urine tested yearly for signs of kidney damage. Learn what you can do to protect your kidneys.
- ▶ Have your blood lipids and cholesterol levels checked every year. If they are high, find out what you can do to lower them.
- ▶ Check your feet and skin every day for blisters, cracks or sores. Get treatment right away for any problems.
- ▶ If you have problems with sexual activity, talk to your doctor.
- ▶ If you are pregnant or planning to be, see your doctor right away. Keeping your blood sugar close to normal before and during pregnancy greatly decreases the risk of problems for you and your baby.
- ▶ If you smoke, find a program to help you quit smoking.
- ▶ Have a complete eye exam every year. Eye damage may not have symptoms in the early, most treatable stages.

Foot Care

Foot care is very important if you have diabetes, but it is especially important if you have lost some of the feeling in your feet from nerve damage (neuropathy) or if you have sores on your feet that do not heal properly.

Below is a list of suggestions for preventing serious problems with your feet:

- 1. Manage your diabetes.** Be sure to keep the following numbers within the normal range: glucose, A1c test results, blood pressure and cholesterol levels. Take your medicines as prescribed; follow your diet, exercise every day and quit smoking. All these actions will help you better manage your diabetes.
- 2. Be more active.** Keep the blood flowing to your feet with daily activity like walking, swimming, dancing, etc.
- 3. Check your feet every day.** Check for cuts, sores, swelling and blisters. You should also check your toenails for signs of infection. If you can't reach your feet, use a mirror to help you look at the bottom of your feet.
- 4. Wash your feet every day.** Use warm, not hot, water when washing your feet. Do not soak your feet for a long time, because this will lead to skin dryness. After washing your feet, be sure to dry them well. Don't forget to dry between your toes!
- 5. Keep the skin soft and smooth.** Apply a thin coating of lotion all over your feet, but be sure not to put any lotion between your toes.
- 6. Caring for corns and calluses.** First, check with your doctor or foot specialist (podiatrist) about how to care for them. Never cut corns or calluses! Do not use over-the-counter liquid corn and callus removers—they can damage the skin on your feet.
- 7. Trim your toenails when needed.** If you can't see well or reach your feet or if your toenails are thick and yellow, have a foot specialist trim your toenails. If you are able to trim your own toenails, be sure to trim straight across and not cut into the corners of the nail.
- 8. Never go barefoot.** Always wear socks and comfortable shoes. Socks with shoes help prevent your feet from blistering. Wear shoes that fit well, provide good support and allow the foot to “breathe.”
- 9. Protect your feet.** Never use hot water bottles or heating pads on your feet. Keep your feet warm, dry and avoid frostbite.

Adapted from “Take Care of Your Feet for a Lifetime” from the National Diabetes Education Program and the US Department of Health and Human Services.

**IF YOU DEVELOP A PROBLEM WITH YOUR FEET,
NO MATTER HOW SMALL, CONTACT YOUR DOCTOR.**

My Blood Sugar Record

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Breakfast Result							
Medication Taken							
Lunch Result							
Medication Taken							
Dinner Result							
Medication Taken							
Bedtime Result							
Medication Taken							
Other							
Comments (Diet, Exercise, Illness, Stress)							

OTHER RESOURCES

[Diabetes.org](https://www.diabetes.org)

[MemorialWeightLossandWellnessCenter.com](https://www.memorialweightlossandwellnesscenter.com)



ChooseMemorial.org

ATTENTION: TRANSLATION SERVICES ARE AVAILABLE FREE OF CHARGE IN SPANISH, AMERICAN SIGN LANGUAGE AND OTHER LANGUAGES. CALL 217-788-3360 (TTY: 1-217-788-2198). MEMORIAL HEALTH SYSTEM COMPLIES WITH APPLICABLE FEDERAL CIVIL RIGHTS LAWS AND DOES NOT DISCRIMINATE ON THE BASIS OF RACE, COLOR, NATIONAL ORIGIN, AGE, DISABILITY, OR SEX.